

PULSE



User Instructions

PULSE SPA300, SPA600, SPA900

Power Amplifiers

www.pulse-audio.co.uk

SAVE THESE INSTRUCTIONS!!

Unpacking and Inspection

Carefully unpack the unit. If it appears damaged in any way, return it to the retailer it was purchased from in its original packaging. PULSE cannot accept any responsibility for damage arising from the use of non approved packaging.

INTRODUCTION

The PULSE series of amplifiers are fully featured rack mount professional power amps, designed to provide high quality, reliable performance for all professional applications from live bands to club installations.

MAIN FEATURES

2 Channel stereo power amplifiers which are fan cooled and feature stereo/bridge mode, softstart, short circuit protection and switchable limiter. The amplifiers are 19" rack mountable & have removable rubber feet for both mobile or fixed use.

- Available in 300W, 600W & 900W
- Detented rotary volume controls
- Protection, clip, signal, bridge & power LED indicators
- Stereo/Bridge mode
- Short circuit and thermal protection
- Ground/Lift switch
- Rugged steel enclosures with front & rear rack mount ears
- Signal Inputs: 2x Balanced XLR & 2x phono
- Signal Outputs: 2x Balanced XLR
- Speaker Outputs: 3x Speakon (1x bridge mode) & 2 pair binding posts

Technical Data			
Model	SPA300	SPA600	SPA900
Power Output RMS (4Ω)	2x 150W	2x 300W	2x 450W
Power Output RMS (8Ω)	2x 100W	2x 200W	2x 300W
Power Output (8Ω) Bridged	300W	600W	900W
Frequency Response	10Hz - 50kHz		
Input Sensitivity	0.77V		
Damping Factor F=1kHz (8Ω)	>350	>350	>350
Slew Rate (Internal)	45V/μS	45V/μS	45V/μS
Signal-to-Noise Ratio	>95dB	>100dB	>100dB
Dimensions (WxHxD):	482x88x350mm		
Weight	9kg	10kg	12kg

INSTALLATION GUIDELINES

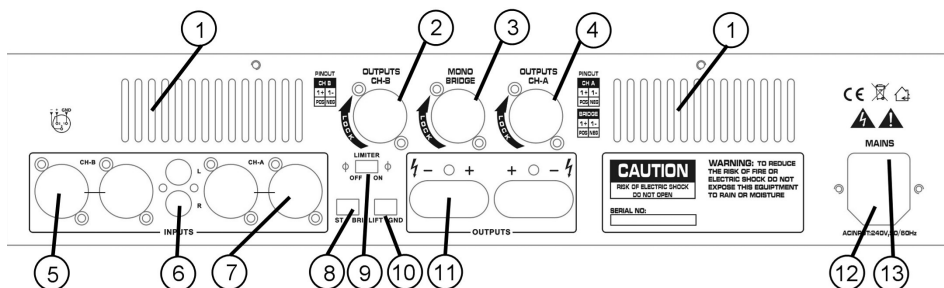
- Do not use these amplifiers in damp or high humidity environments. Do not use outdoors or anywhere where liquids could fall or splash onto the amplifier.
- Ensure the amp is adequately ventilated, with free airflow to the front and rear panels. Keep away from other heat sources. If the amps are mounted in a rack with other amps, ensure there is adequate cool air flow front and rear. Note that air is drawn in through the back panel, and exhausted through the front panel.
- NEVER cover the amplifiers, as they may overheat.
- PULSE power amplifiers are designed to fit standard 19" racks, with a 2U height and 17" depth. We recommend the use of rear rack supports, especially if the rack is to be mobile. Use shakeproof washers or threadlock adhesive to prevent mounting bolts becoming loose in transit.
- Ensure that the AC power supply is correct for your amplifier. The required AC supply is stated on the rear panel next to the AC power input.
- Ensure that you use the correct type of mains lead for your equipment and country. This must be free from damage and easily accessible during use.
- Keep away from magnetic recording media (tape, mini disc, hard drive etc). Power amplifiers produce an electromagnetic field, which could affect stored files.

Wiring Conventions in PULSE Power Amplifiers

Phono/RCA (unbalanced); Tip=Signal Positive. Sleeve=Signal Ground.

XLR (balanced); Pin1=Signal Ground, Pin2=Signal Positive, Pin3=Signal Negative.

Speakon ; 1+=Speaker Positive. 1-=Speaker Negative.



- 1) Air ventilation slots – DO NOT BLOCK
- 2) Channel B speaker output via SPEAKON™ socket. Use 1+1- terminals only, minimum speaker impedance 4Ω
- 3) Bridge Mono speaker output via SPEAKON™ socket. Use 1+1- terminals only, minimum speaker impedance 8Ω
- 4) Channel A speaker output via SPEAKON™ socket. Use 1+1- terminals only, minimum speaker impedance 4Ω
- 5) Balanced XLR signal link output
- 6) Unbalanced phono (RCA) signal input connections
- 7) Balanced XLR signal input
- 8) Mode selection switch – this selects either BRIDGE MONO or STEREO operation.

In BRIDGE MONO the amplifier works as one signal channel ideal for driving higher power speakers. This must be used in conjunction with the BRIDGE MONO speaker output, only one signal input is required (into Channel A), this must be mirrored on the front panel controls – turn Channel B to the lowest setting and only use Channel A to control the amplifier.

In STEREO mode the amplifier will operate as two independent channels – both Channel A and Channel B

- 9) Limiter – this will help protect your amplifier and speakers against input signals that are too high. When the limiter function is switched on and the input signal too high the amplifier will automatically reduce the input gain. This is a safety feature and does not permit misuse or abuse of the amplifier.
- 10) Ground Lift Switch – some equipment may present a mains hum/buzz, this switch will remove the signal ground and reduce the effect of the mains hum..
- 11) Binding post outputs – for certain installations it may be better suited to use the binding post outputs. As with all speaker wiring care must be taken to ensure no wires can present a short circuit to the amplifier. ⚠ Speaker wires carry high voltages, care

should be taken to ensure no bare wires can be touched as this may result in electric shock.

- 12) IEC Mains Inlet – Use only the supplied power cord or suitable replacement with the correct fuse.
- 13) Mains Inlet Fuse – Replace only with the same rating as originally supplied. If the fuse fails do not replace with a higher value.

Compliance

This equipment is designed to comply with the following standards:

BS EN55103-1:1996 BS EN55103-2:1997 BS EN60065:2002



When this product reaches the end of its life, do not dispose with household waste. See www.recycle-more.co.uk for details of how to dispose of PULSE products in an environmentally sound fashion, or contact PULSE directly via www.pulse-audio.co.uk

Amplifier care bullet points.

DO ...

1. Read the manual; understand the operation, limitations and safety instructions before using the product
2. Use good quality cables of the correct type, in the correct sockets. Speaker cables should be manufactured from 1.5mm² or larger cable. Keep speaker lengths as short as possible to minimise signal loss.
3. Listen to your sound; if it's distorted, reduce gain, volume or both
4. Use adequate amplification and speakers for your needs
5. Checks the mains supply in the venue; use a mains checker.
6. Ensure your amp, speakers and all cables are free from damage
7. Protect your amp from moisture, smoke/fog machines and glitter cannons
8. Make and check all connections before you switch on
9. Set amp volume to '0' at switch on. Slowly turn up, checking all speakers are working. If there are problems turn the amp off and resolve them

FOLLOW THE SIGNAL PATH!

- Source output to mixer/preamp input (shielded signal cable),
- Mixer/preamp output to power amp input (shielded signal cable),
- Power amp output to speaker input (unshielded speaker cable).

DO NOT ...

1. Prevent airflow to your amp; ventilation is required front and rear
2. 'Daisy chain' speakers. Run a maximum of 1x4Ω speaker or 2x8Ω speaker per amplifier channel.
3. Run amplifiers with the clip or limit lights on constantly
4. Send a clipped or overdriven signal from your mixer or source to the amp
5. Store your amp or speakers in a damp environment
6. Overload mains sockets; Never run more than 3000W of amplifiers, lights or other electronic equipment from one mains outlet socket.
7. Connect 2 amp channels, or 2 different amps to one speaker
8. Short circuit or cross-connect an amps inputs or outputs
9. **The front panel has both SIGNAL and CLIP LED indicators – if the CLIP LED's illuminate reduce the input signal to the amplifier immediately. A clipped signal within the audio signal chain can damage both speakers and amplifiers.**

IMPORTANT SAFETY INSTRUCTIONS

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK OR INJURY TO PERSONS

WARNING - Using electric product, basic precautions should always be followed, including the following:

1. Read all the SAFETY INSTRUCTIONS before using the product.
2. To reduce the risk of injury, close supervision is necessary when the product is used near children.
3. Do not use this product near water -for example, near a bathtub, washbowl, kitchen sink, in a wet basement or near a swimming pool or the like.
4. This product is capable of producing sound levels that could cause permanent hearing loss. DO NOT operate for a long period of time at high volume or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
5. This product should be located so that its location or position does not interfere with its proper ventilation.
6. This product should be located away from heat sources such as radiators, heat registers or other products that produce heat.
7. The product should be connected to a power supply only of the type described on the operating instructions or as marked on the product. Always ensure that a good quality mains lead is used applicable for your country. The following wiring convention is used in all product mains leads, and must be strictly observed: Green & Yellow = Earth. Brown = Live. Blue = Neutral. IMPORTANT: THIS UNIT MUST BE EARTHED!

8. If the mains fuse need replacing, DISCONNECT THE PRODUCT FROM THE MAINS SUPPLY. The fuse is above the mains IEC socket, and must be replaced with a fuse of the type and rating stated on the rear panel. If a replacement fuse fails immediately, contact your local service agent. DO NOT replace with a higher value.
9. The power-supply cord of the product should be unplugged from the outlet when left unused for a long period of time. When unplugging the power-supply cord, DO NOT pull on the cord, but grasp it by the plug.
10. Ensure the mains isolation switch is readily accessible when the product is in use.
11. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
12. The product should be serviced by qualified service personnel when:
- A. The power-supply cord or the plug has been damaged; or
 - B. Object have fallen, or liquid has been spilled into the product; or
 - C. The product has been exposed to rain; or
 - D. The product does not appear to operate normally or exhibits a marked change in performance; or
 - E. The product has been dropped or the enclosure damaged.
14. DO NOT attempt to service the product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.
15. WARNING -DO NOT place objects on the product's power cord or place it in a position where anyone could trip over, walk on or roll anything over it. DO NOT allow the product to rest on or to be installed over power cords of any type. Improper installations of this type create the possibility of fire hazard and/or personal injury.

IF YOUR AMP STOPS WORKING ;

- READ THE MANUAL !!!
- Turn volume to zero on both channels
- Check all connections (input and output, at both ends of cable)
- Check status lights on front panel
- Disconnect from mains before changing fuse
- Replace fuse only with same type and rating
- If problems persist contact a qualified service agent

FAULT	PROBLEM	SOLUTIONS
No sound (Power LED off)	AC supply not connected or switched off.	Check AC connections and switches.
	Blown fuse	Check and replace fuses at plug and IEC socket. USE ONLY SAME TYPE AND RATING !
No sound (Power LED on)	No input, or input too low	Check input is connected, and LED. are showing adequate signal present.
	Level controls set too low	Increase level controls
	Speakers faulty or not connected	Check speakers and speaker connections
Hum or buzz is audible	Noise from AC supply is being picked up in the signal path	Use good quality, shielded signal cables and ensure they are kept away from AC power cables and other AC powered equipment.
	There is an earth problem	Use a mains tester to ensure the AC outlet has a good earth. Power connected equipment (e.g mixer and amp) from the same AC outlet where possible.
Distortion is audible	Excessive signal level somewhere in signal chain.	Use the LED to ensure the input level to the amp is at the correct level Check levels at mixer or source
	Damaged or poor quality cables	Use only high quality cables of the appropriate type, protect them from damage and regularly check connections.
Sound cuts out or is intermittent	Damaged or poor quality cables or connectors, connectors not properly inserted, amp overheating	Check all cables and connections, refer to above sections regarding distortion and temp warning light.

Service

All PULSE products are thoroughly examined and tested before leaving the factory, and if used correctly will give many years of excellent service. However, if a problem arises, proceed as follows:

- A) Contact the retailer from whom the unit was purchased and describe the symptoms of the fault.
- B) If the retailer cannot help, return the equipment to the national distributor for your country. Use the original packaging to protect the product from damage. Include a note with the equipment stating your name and address, details of the problem, date code and date and place of purchase.

The unit does not contain any user serviceable parts. For details of spares, accessories and other products, contact your local retailer. In the event of any difficulty contact PULSE directly via www.pulse-audio.co.uk